ELECTRONIC EAR THERMOMETER WITH MULTIPLE MEASUREMENT AND MEMORY FUNCTION

BACKGROUND OF THE INVENTION

The present invention relates to a multiple measurement electronic thermometer, and more particular, to an electronic ear thermometer operative to measure, memorize and display ear temperatures of multiple people.

The body temperature is a health indication of human body. The condition of human immunity system is typically monitored by temperature variation. Therefore, thermometer is an instrument required for every household. During the outbreak period of severe acute respiratory syndrome (SARS), various types of thermometers, particularly the convenient electronic ear thermometer, were out of supply. As the conventional ear thermometer can only display the current measurement, and the current measurement erased after a short period of time such as 5 seconds of display. Therefore, the temperature variation for one or more than one person cannot be traced unless additional recording medium is applied. Although some electronic ear thermometers have memory functions, they are limited to records of a single person. In other words, the measurement obtained from different persons cannot be distinguished by the electronic ear thermometers.

BRIEF SUMMARY OF THE INVENTION

The present invention provides an electronic ear thermometer having the function of multiple measurement and memory. By such electronic ear thermometer, the temperature measurement of every users obtained at different time can be recorded into individual memory sectors and retrieved therefrom. Therefore, the temperature variation of each user can be easily monitored.

The electronic ear thermometer provided by the present invention comprises a microprocessor serving as a control and a memory unit in electric

communication therewith. The memory unit is partitioned into a plurality of memory sectors. Each memory sector is in the form of a queue data structure, such that the ear temperature measured from each individual can be saved into the corresponding memory sector. Therefore, the temperature measurement and history of each user can be retrieved as required.

These and other objectives of the present invention will become obvious to those of ordinary skill in the art after reading the following detailed description of preferred embodiments.

It is to be understood that both the foregoing general description and the following detailed description are exemplary, and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

These, as well as other features of the present invention, will become apparent upon reference to the drawings wherein:

Figures 1 shows a block diagram of the electronic ear thermometer provided by the present invention;

Figure 2 shows a circuit diagram of the electronic ear thermometer; and

Figure 3 shows a perspective view of the electronic ear thermometer.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers are used in the drawings and the description to refer to the same or like parts.

As shown in Figure 1, the electronic ear thermometer provided by the present invention comprises a microprocessor 11, a display unit 12, an ear temperature measuring unit 13, a memory unit 14 and a keypad unit 15. The

microprocessor 11 serves as a control center in electric communication with the display unit 12, the ear temperature measuring unit 13, the memory unit 14 and the keypad unit 15. When the user presses a key or a button of the keypad unit 15, an input signal is sent from the keypad unit 15 to the microprocessor 11. According to the input signal, the microprocessor 11 outputs a control signal to a specific unit to the display unit 12, the ear temperature measuring unit 13, and/or the memory unit 14 to perform required actions in accordance with the input signal. The display unit 12 includes a liquid crystal display (LCD) for displaying ear temperature, measuring time and the identification code for the user, for example. The memory unit 14 includes an electrically erasable and programmable read only memory (EEPROM) or a random accessible memory (RAM) operative to store data such as ear temperature and measuring time.

Figure 2 shows the circuit diagram of the electronic ear thermometer. As shown, the ear temperature measuring unit 13 includes a temperature sensor 131 operative to convert the measured temperature into an electric signal and an operation amplifier 132 to amplify the electric signal. The electric signal is then input to the microprocessor 11. The microprocessor 11 is operative to generate a control signal to the display unit 12 for displaying the temperature information carried by the electric signal input to the microprocessor 11. The microprocessor 11 is also operative to generate another control signal to the memory unit 14 for recording and saving the information carried by the electric signal. The memory unit 14 is partitioned into a plurality of memory sectors in the form of queues data structures. Therefore, the information is saved in a first in, first out manner. When the memory sector is full, the first-in data or information will be extruded to allow the current measurement to be saved therein. Therefore, the record saved in the memory sector is always the latest measurement of the user. For example, when each memory sector is operative to store only five sets of data, when the sixth measurement is performed, the

first memory saved in the memory sector is erased from the memory sector while the sixth measurement is saved therein. The electronic ear thermometer also provides the functions of input the number of users by the number selection key 151 of the keypad unit 15. Further, identification code of each of the users such as user A and user B can also be defined by the keypad unit 15 as well. When the number of users and the identification code of the current user are input, the activation key 152 is pressed. Consequently, the temperature measurement is activated, and the measuring result is displayed by the display unit 12 and saved in the memory unit 14 under the control of the microprocessor 11. The measuring result includes not only the ear temperature, but also the duration of measurement. Therefore, the measuring history for each individual user can be properly maintained.

This disclosure provides exemplary embodiments of the present invention. The scope of this disclosure is not limited by these exemplary embodiments. Numerous variations, whether explicitly provided for by the specification or implied by the specification, such as variations in shape, structure, dimension, type of material or manufacturing process may be implemented by one of skill in the art in view of this disclosure.